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1.96 Resume  
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# WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO

and  
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

AS OF  
MARCH 1, 1980



U.S. DEPARTMENT of AGRICULTURE \* SOIL CONSERVATION SERVICE

Collaborating with  
COLORADO STATE UNIVERSITY EXPERIMENT STATION  
STATE ENGINEER of COLORADO  
and STATE ENGINEER of NEW MEXICO

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## RESOURCES CONSERVATION ACT (RCA)

The future of our soil and water resources depends on how wisely we use them now and in the future. Over the years, some serious problems have grown that threaten these resources. The Resources Conservation Act (RCA) will help us address these problems on nonfederal land.

Under the Act, the U.S. Department of Agriculture is developing a national program for the conservation of soil, water, and related natural resources. After appraising resource conditions and trends, USDA identified seven resource areas and set objectives for each area. To reach these objectives, USDA has proposed seven conservation strategies. We need your help in deciding which of these proposed strategies, or combinations of them, should become the Nation's future soil and water conservation program.

Your opinions on soil and water conservation objectives and strategies are important. From January 28 until March 28, 1980, you are invited to review RCA publications and proposals and make comments and suggestions. You can review RCA documents and get a summary of them in offices of the USDA Soil Conservation Service (SCS) or the Agricultural Stabilization and Conservation Service (ASCS).

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PRECEDENCE SECTION  
CURRENT SERIAL RECORDS

## WATER SUPPLY CONDITIONS

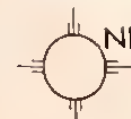
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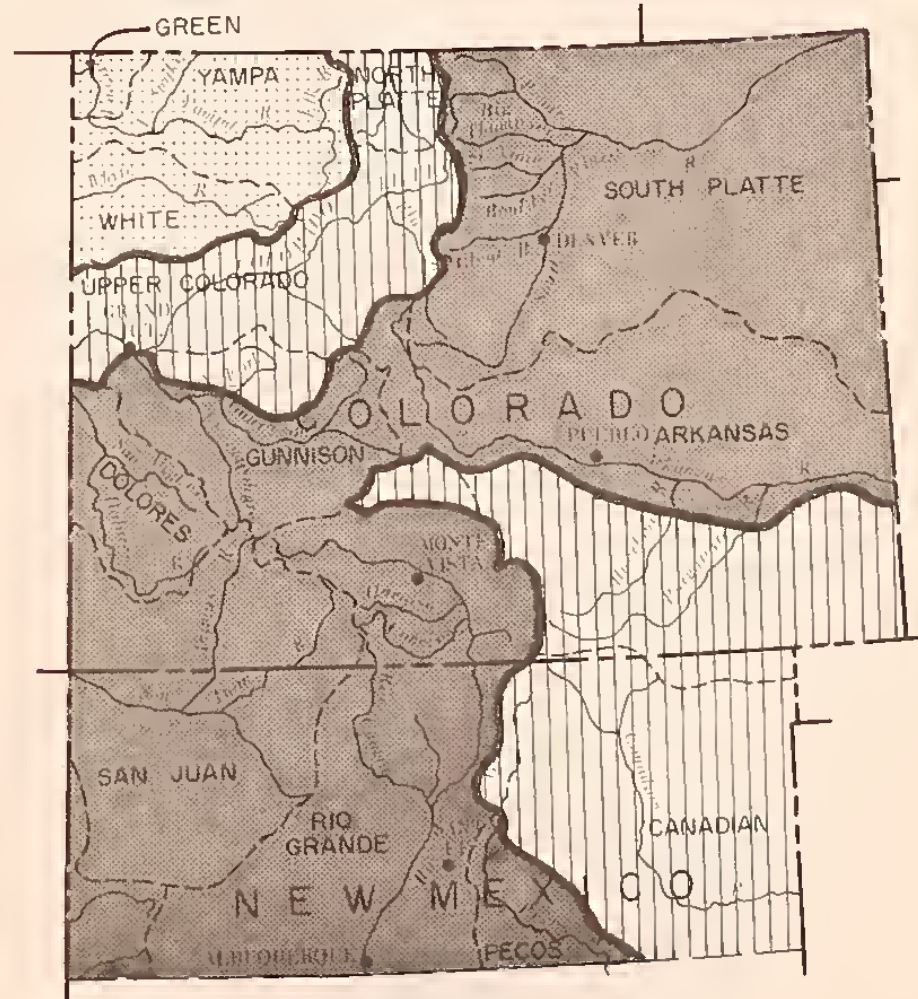
ABOVE NORMAL PRECIPITATION WAS RECEIVED DURING FEBRUARY OVER MUCH OF COLORADO AND NEW MEXICO. SOUTHWESTERN COLORADO AND NORTHERN NEW MEXICO EXPERIENCED EXTREMELY HEAVY SNOWFALL FOR THE SECOND STRAIGHT MONTH BRINGING MOUNTAIN SNOWPACK LEVELS TO NEW SEASONAL HIGHS WHICH ARE 25 TO 40 PERCENT GREATER THAN THE PREVIOUS MONTH. MAXIMUM OF RECORD SNOWPACKS WERE MEASURED IN THE HEADWATERS OF THE RIO CHAMA. STREAMFLOW FORECASTS ARE ALL ABOVE NORMAL. ALL FORECASTS ARE A JOINT EFFORT OF THE SOIL CONSERVATION SERVICE AND THE NATIONAL WEATHER SERVICE.



**COLORADO**-- STREAMFLOW FORECASTS RANGE FROM NEAR 10% ABOVE NORMAL IN THE YAMPA AND WHITE RIVERS TO BETWEEN 50 AND 75% ABOVE NORMAL IN THE RIO GRANDE, ARKANSAS, AND SAN JUAN BASINS. THE APPARENT TREND OF INCREASING FORECASTS FROM NORTH TO SOUTH IS A CONSEQUENCE OF THE FREQUENT SOUTHWESTERLY STORM SYSTEMS WHICH ENTERED THE STATE DURING FEBRUARY. STORAGE IN IRRIGATION RESERVOIRS STATEWIDE IS 12% ABOVE NORMAL. ALL SIGNS POINT TO A PLENTYFUL WATER SUPPLY DURING THE COMING SPRING AND SUMMER.



**NEW MEXICO**-- EXTREMELY HEAVY SNOWFALL IN THE MOUNTAINS OF NORTHERN NEW MEXICO DURING FEBRUARY HAS INCREASED THE SNOWPACK TO 75% ABOVE NORMAL. IN THE RIO CHAMA DRAINAGE THE SNOWPACK IS 217% OF NORMAL AND SEVERAL SNOW COURSES ARE MAXIMUM OF RECORD. STREAMFLOW FORECASTS ARE 220 TO 254% OF AVERAGE ON THE RIO GRANDE AND RIO CHAMA. SMALLER STREAMS ORIGINATING IN THE SANGRE DE CRISTO MOUNTAINS ARE FORECAST TO FLOW AT 10 TO 20% ABOVE NORMAL. RESERVOIR STORAGE IN THE RIO GRANDE IS 74% GREATER THAN NORMAL. AN ABUNDANT WATER SUPPLY IS ANTICIPATED THROUGHOUT THE RIO GRANDE BASIN.



LEGEND  
▲ Forecast Point  
Watershed Boundaries  
STREAMFLOW FORECASTS  
Percent of 1963-77 Average  
Over 130%  
110-130%  
90-110%  
70-90%  
Under 70%

The map on this page indicates the most probable water supply as of the date of this report. Estimates assume average conditions of snowfall, precipitation and other factors from this date to the end of the forecast period. As the season progresses accuracy of estimates improve. In addition to expected streamflow, reservoir storage, soil moisture in irrigated areas, and other factors are considered in estimating water supply. Estimates apply to irrigated areas along the main streams and may not indicate conditions on small tributaries.

"The Conservation of Water begins with the Snow Survey"





# GUNNISON RIVER WATERSHED IN COLORADO



## YOUR WATER SUPPLY

THE SNOWPACK IN THE GUNNISON RIVER IS EXCELLENT FROM SNOWPACK MEASUREMENTS TAKEN AS OF MARCH 1. ALL AREAS WITHIN THE DRAINAGE HAVE INCREASED SIGNIFICANTLY WITH SURFACE CREEK NEAR CEDAREDEGE SHOWING THE LARGEST INCREASE FROM 120% ON FEBRUARY 1 TO 157% FOR MARCH 1. PARK RESERVOIR SNOW COURSE INCREASED BY 11.8 INCHES OF WATER WHICH IS 295% OF THE NORMAL INCREASE OF 4.0 INCHES. STREAMFLOWS IN THE DRAINAGE ARE FORECAST ABOVE OR WELL ABOVE AVERAGE WHICH WILL MEAN EXCELLENT WATER SUPPLIES FOR THE COMING SEASON. RESERVOIR STORAGE HAS NOT CHANGED SIGNIFICANTLY DURING THE MONTH AND REMAINS 20% ABOVE AVERAGE.

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Gunnison River inflow to Blue Mesa Reservoir (1)	1055	140	754.0
Gunnison River near Grand Junction (2)	1600	139	1150.0
North Fork of Gunnison (3)	330	126	262.0
Surface Creek near Cedaredge	20	132	15.2
Uncompahgre River at Colona	145	112	129.0

(1) Observed flow plus change in storage in Taylor Reservoir. (2) Observed flow plus change in storage in Blue Mesa, Morrow Point and Taylor Reservoirs. (3) Observed flow plus change in storage in Teton Reservoir.

## WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Ohio Creek	Exc.	Exc.
Slate River	Exc.	Exc.
Taylor River	Exc.	Exc.
Tomichi Creek	Exc.	Avg.

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin of Stream and Reservoir	Usable Capacity	Usable Storage		
		Thous. Feet	Last Year	1963-77 Average
Blue Mesa	830	448	418	366
Morrow Point	121	115	115	101
Taylor	106	72	62	63

## LIST OF COOPERATORS

The following organizations cooperate in snow surveys for the Colorado, Platte, Arkansas and Rio Grande watersheds. Many other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

### STATE

Colorado State Engineer  
 Colorado State Soil Conservation Board  
 New Mexico State Engineer  
 Colorado State University Experiment Station  
 Rocky Mountain Forest and Range Experiment Station  
 New Mexico Dept. of Game and Fish  
 University of Colorado, INSTAAR

### FEDERAL

Department of Agriculture  
 Forest Service  
 Soil Conservation Service  
 Department of Interior  
 Bureau of Reclamation  
 Geological Survey  
 National Park Service  
 Department of Commerce  
 NOAA, National Weather Service  
 Defense Department  
 Army Engineer Corps  
 National Aeronautics and Space Administration  
 Goddard Space Flight Center

### INVESTOR OWNED UTILITIES

Colorado Public Service Company  
 Public Service Company of New Mexico

### MUNICIPALITIES

City of Denver  
 City of Boulder  
 City of Greeley  
 City of Fort Collins

## SUMMARY of SNOW MEASUREMENTS

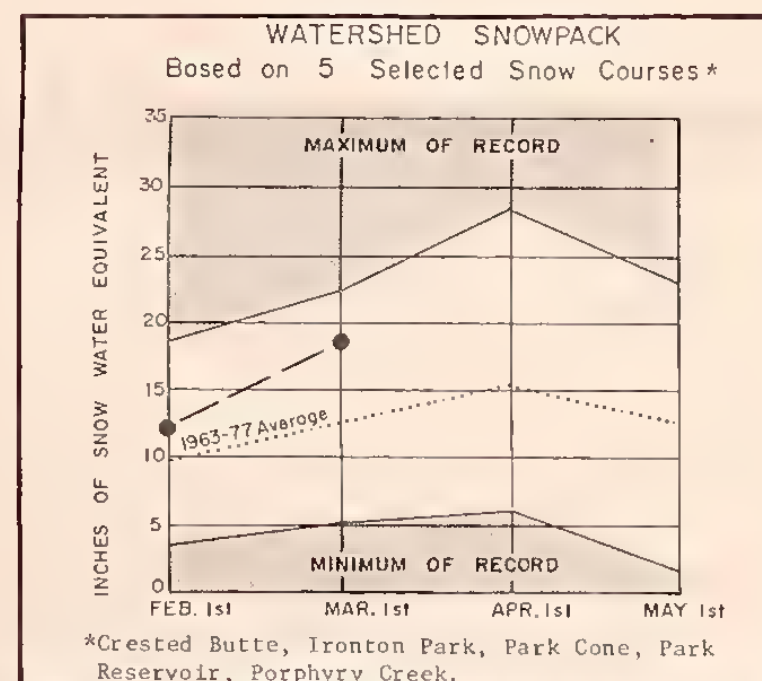
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and SUBWATERSHED	Number of Courses Surveyed	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Gunnison	13	96	148
Surface Creek	3	104	157
Uncompahgre	3	86	114

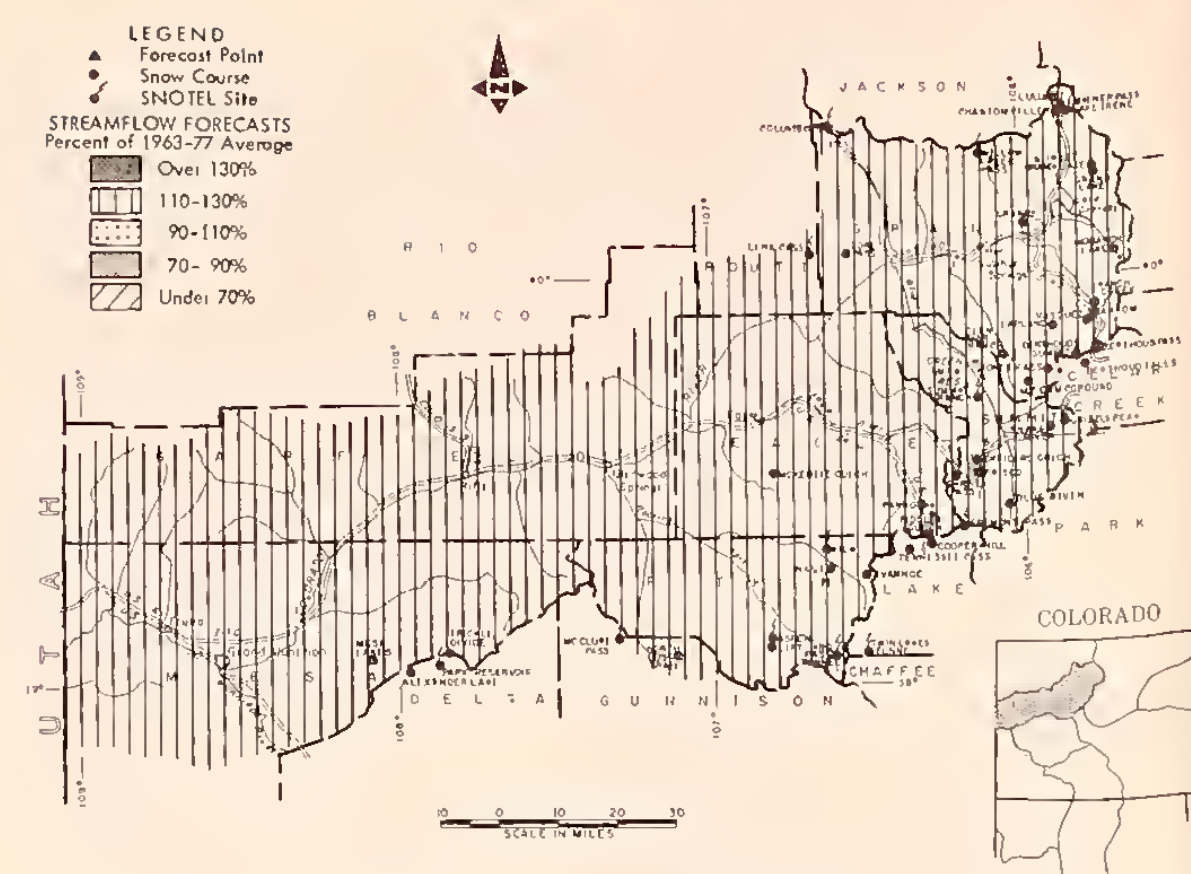
## SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	CURRENT INFORMATION		PAST RECORD	
			WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG. 1963-77
<b>GUNNISON BASIN</b>						
<u>Gunnison River</u>						
Alexander Lake	2/28	81	26.4	25.4	16.9	
Blue Mesa	2/28	36	8.6	10.8	7.1	
Butte	2/28	70	20.7	20.3	12.4	
Cochetopa Pass (B)	2/26	25	5.3	7.1	4.7	
Crested Butte	2/28	72	20.5	20.8	11.1	
Keystone	2/28	90	27.3	28.8	16.3	
Lake City	2/25	36	7.7	9.6	6.1	
Mesa Lakes (B)	2/28	63	18.8	18.5	12.9	
McClure Pass	2/27	62	17.7	18.8	13.9	
Park Cone	2/26	53	13.0	13.1	8.6	
Park Reservoir	2/27	97	30.8	28.8	18.5	
Porphyry Creek	2/29	58	15.9	18.5	13.2	
Stungullion	2/25	55	12.9	16.1	---	
Tomichi	2/29	47	12.4	14.1	10.6	
<u>Surface Creek</u>						
Alexander Lake	2/28	81	26.4	25.4	16.9	
Mesa Lakes	2/28	63	18.8	18.5	12.9	
Park Reservoir	2/27	97	30.8	28.8	18.5	
<u>Uncompahgre River</u>						
Idarado	2/27	55	14.4	17.2	---	
Ironton Park	2/27	48	12.1	14.6	12.1	
Red Mountain Pass	2/27	97	28.7	32.8	24.0	
Telluride (B)	2/29	35	8.9	10.0	7.3	

NS-No survey.  
 (B)-On adjacent drainage.



# COLORADO RIVER WATERSHED IN COLORADO



## YOUR WATER SUPPLY

ABOVE NORMAL PRECIPITATION THROUGHOUT THE BASIN DURING FEBRUARY HAS BOOSTED THE MOUNTAIN SNOWPACK TO 39% ABOVE AVERAGE. THIS IS ABOUT 12% GREATER THAN THE SNOWPACK AT THE SAME TIME A YEAR AGO. AS A RESULT OF THE HEAVY SNOWPACK STREAMFLOW FORECASTS HAVE ALL BEEN ADJUSTED UPWARD FROM LAST MONTH. PROJECTIONS OF THIS SPRING AND SUMMER'S RUNOFF RANGE FROM 25 TO 40% ABOVE NORMAL IN MOST WATERSHEDS. STORAGE IN MAJOR RESERVOIRS IS 110% OF AVERAGE AND NEARLY 40% GREATER THAN LAST YEAR. SOIL MOISTURE IS RATED AS GOOD IN ALL AREAS.

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Blue River inflow to Dillon Reservoir	215	129	167.0
Blue River inflow to Green Mountain Reservoir (1)	370	129	287.0
Colorado River near Gameo (2)	3200	137	2336.0
Colorado River near Dotsero (3)	1800	127	1422.0
Colorado River inflow to Granby Reservoir (4)	270	124	218.0
Eagle River below Gypsum	387	130	298.0
Roaring Fork at Glenwood Springs (5)	900	128	698.0
Williams Fork near Parshall (6)	82	139	59.0
Willow Creek inflow to Willow Creek Reservoir	57	119	48.0

(1) Observed flow plus diversion through Richman Tunnel and change in storage in Dillon Reservoir. (2) Observed flow plus the changes in storage in the Reservoirs. (3) Observed flow plus change in storage in the Reservoirs. (4) Observed flow plus change in storage in the Reservoirs. (5) Observed flow plus change in storage in the Reservoirs. (6) Observed flow plus change in storage in the Reservoirs.

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin of Stream and Reservoir	Usable Capacity	Usable Storage		
		Thous. Feet	Last Year	1963-77 Average
Dillon	251	228	164	200
Granby	466	262	114	242
Green Mountain	139	77	63	67
Homestake	43	20	38	19
Ruedi	101	63	71	64
Vega	32	11	11	11
Williams Fork	97	45	44	37
Willow Creek	9	7	7	7

## WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Brush	Exc.	Avg.
Gypsum Creek	Exc.	Avg.

## SUMMARY of SNOW MEASUREMENTS

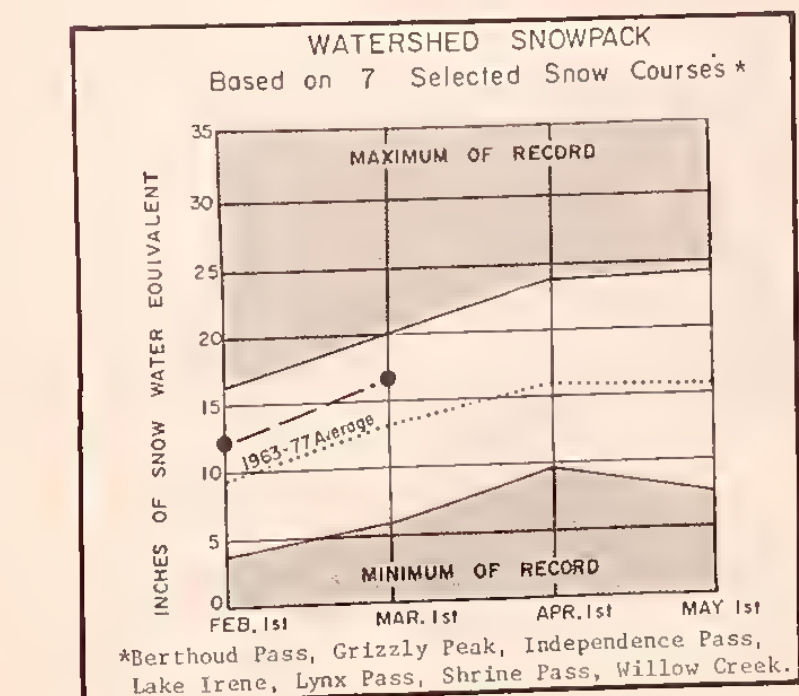
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and SUBWATERSHED	Number of Courses Surveyed	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Blue River	8	131	144
Colorado	20	115	141
Plateau	3	104	155
Roaring Fork	8	101	127
Williams Fork	3	125	143
Willow	2	89	125

## SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	CURRENT INFORMATION		PAST RECORD	
			WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG. 1963-77
<b>COLORADO BASIN</b>						
<u>Blue River</u>						
Blue River	2/26	42	12.0	6.5	7.1	
Fremont Pass	2/28	60	15.8	13.6	12.3	
Grizzly Peak	2/28	62	17.8	14.5	14.1	
Hoosier Pass	2/26	51	16.3	10.8	9.9	
Officers Gulch	2/27	38	9.4	7.7	5.1	
Shrine Pass	2/28	59	16.5	14.6	13.9	
Snake River	2/27	38	9.9	7.4	6.8	
Summit Ranch	2/26	39	11.3	7.9	6.3	
Ute Pass	2/29	62	14.5	9.6	---	
<u>Colorado River</u>						
Arrow	2/27	53	15.4	13.4	10.7	
Berthoud Pass	2/26	66	20.1	13.0	12.4	
Berthoud Summit	2/28	63	19.9	16.3	14.6	
Cooper Hill	2/28	43	10.2	9.7	8.5	
Copper Mountain	2/27	54	13.8	12.2	---	
Glenmar Ranch	2/27	37	9.6	9.1	7.2	
Gore Pass	2/26	40	10.6	12.4	8.5	
Grand Lake	2/23	54	12.3	11.2	7.1	
Lake Irene	2/25	78	23.0	21.5	17.4	
Lapland	2/26	44	12.2	7.8	8.6	
Lulu	2/26	71	21.9	21.8	15.0	
Lynx Pass	2/26	44	10.8	11.2	10.3	
McKenzie Gulch	2/28	27	6.0	5.8	5.3	
Middle Fork	2/27	46	11.9	9.6	8.1	
Milner	2/25	59	16.6	14.8	11.3	
North Inlet	2/24	48	12.2	10.5	7.4	
Pando	2/28	37	9.2	7.1	8.0	
Phantom Valley	2/23	58	14.9	13.1	9.1	
Ranch Creek	2/27	42	11.6	9.9	7.8	
Tennessee Pass (B)	2/27	44	11.1	9.9	8.2	
Vail Mountain	2/25	78	23.0	21.0	---	
Vasquez	2/28	53	15.2	10.8	10.0	
<u>Plateau Creek</u>						
Mesa Lakes	2/28	63	18.8	18.5	12.9	
Park Reservoir	2/27	97	30.8	28.8	18.5	
Trickle Divide	2/27	94	29.9	29.5	19.9	
<u>Roaring Fork</u>						
Aspen	2/26	56	14.0	16.8	13.7	
Independence Pass	2/29	64	17.0	16.5	12.8	
Ivanhoe	2/26	68	18.2	17.1	14.3	
Kiln	2/26	47	11.2	12.0	10.5	
Lift	2/26	68	17.8	13.6	13.0	
McClure Pass	2/27	62	17.7	18.8	13.9	
Nast	2/28	29	8.5	8.9	5.8	
North Lost Trail	2/27	65	18.2	18.4	13.0	
<u>Williams Fork River</u>						
Glenmar Ranch	2/27	37	9.6	9.1	7.2	
Jones Pass	2/26	64	17.6	12.6	12.1	
Middle Fork	2/27	46	11.9	9.6	8.1	
<u>Willow Creek</u>						
Granby	2/27	35	8.2	9.8	6.6	
Willow Creek Pass	2/27	47	12.8	13.7	10.2	

NS-No survey.  
 (B)-On adjacent drainage.

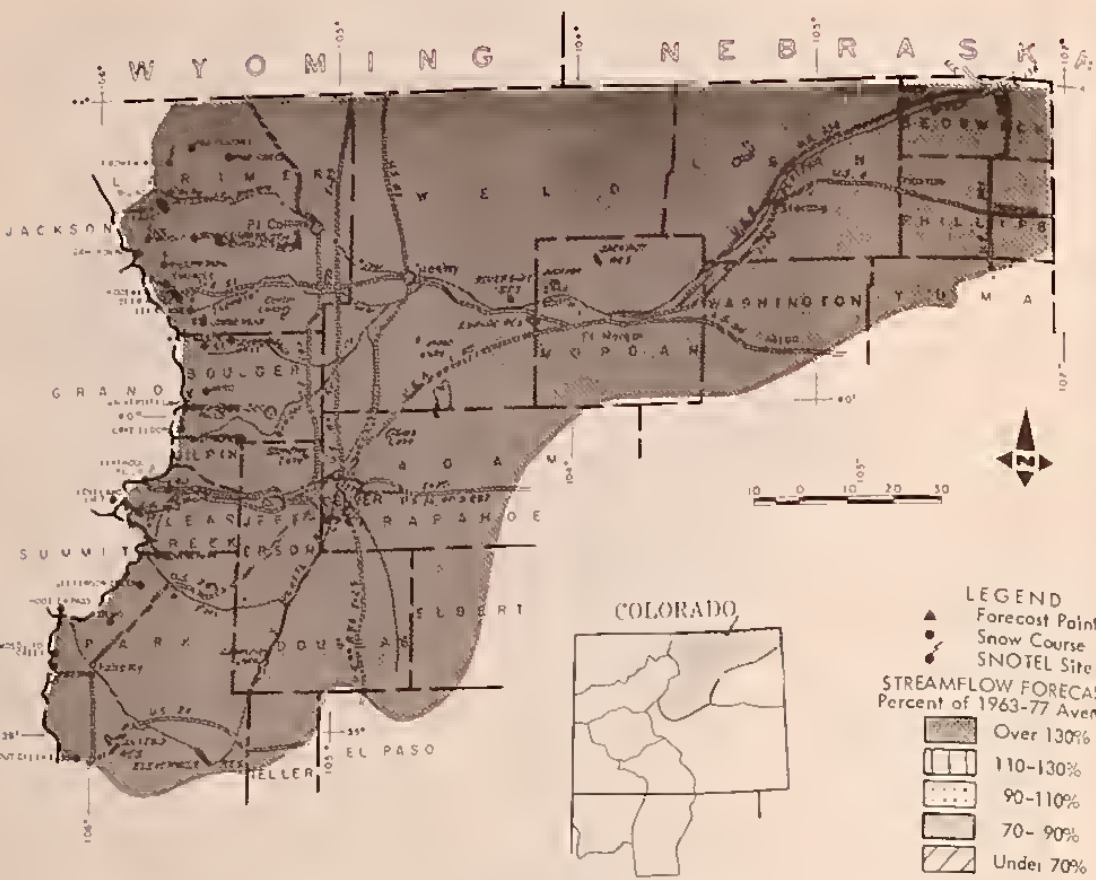








SOUTH PLATTE RIVER WATERSHED IN COLORADO



**YOUR WATER SUPPLY**  
SLIGHTLY BELOW NORMAL PRECIPITATION DURING THE MONTH OF FEBRUARY WAS EXPERIENCED ALONG MOST OF THE FRONT RANGE. STORMS WHICH DUMPED HEAVY AMOUNTS OF PRECIPITATION IN THE CENTRAL AND SOUTHWESTERN MOUNTAINS PRODUCED LESSER AMOUNTS ALONG THE EAST SIDE OF THE CONTINENTAL DIVIDE. DESPITE THE SLIGHT DROP IN BASIN SNOWPACK PERCENTAGES, STREAMFLOW FORECASTS REMAIN RELATIVELY UNCHANGED FROM LAST MONTH. STREAMFLOW VOLUMES ABOUT A THIRD HIGHER THAN NORMAL ARE FORECAST FOR THE PLATTE AND ITS MAJOR TRIBUTARIES DURING THE RUNOFF SEASON. RESERVOIR STORAGE IS 13% GREATER THAN LAST YEAR AND 12% ABOVE NORMAL FOR THIS TIME OF YEAR.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Bear Creek at Morrison	32	114	28.0
Big Thompson River at Drake (1)	135	132	102.0
Boulder Creek at Orodell	60	133	45.1
Cache La Poudre River at Canyon Mouth (2)	325	134	243.0
Clear Creek at Golden (3)	160	133	120.0
St. Vrain Creek at Lyons	95	133	71.6
South Platte River at South Platte	250	130	193.0

(1) Observed flow plus hypsometric curve. (2) Observed flow minus hypsometric curve plus average and maximum discharge. (3) Observed flow minus hypsometric curve plus average and maximum discharge.

WATER SUPPLY OUTLOOK

STREAM or AREA	Spring Season	Summer Season
Coal Creek	Exc.	Avg.
North Fork of South Platte	Exc.	Avg.
North Fork of Cache La Poudre	Exc.	Avg.
Ralston Creek	Exc.	Avg.
Rock Creek	Exc.	Avg.
South Platte from Greeley to Fort Morgan	Exc.	Avg.
South Platte from Fort Morgan to Sterling	Exc.	Avg.
Sterling	Exc.	Avg.
South Platte below Sterling	Exc.	Avg.

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream	1963	1964	1965	1966
Antero	16	16	15	14
Barr Lake	32	24	20	23
Black Hollow	8	5	3	4
Boyd Lake	44	41	37	37
Cache La Poudre	10	9	8	7
Carter Lake	109	101	99	91
Chambers Lake	9	6	4	3
Cheesman	79	69	36	48
Cobb Lake	34	20	4	14
Eleven Mile	98	98	91	86
Empire	38	19	11	29
Fossil Creek	12	5	7	8
Gross	43	23	20	28
Halligan	6	6	4	4
Horsetooth	144	114	84	95
Jackson	35	32	23	32
Julesburg	28	18	20	20
Lake Loveland	14	8	77	9
Lone Tree	9	8	1	6
Mariano	6	5	4	5
Marshall	10	7	3	4
Marston	17	17	16	15
Milton	24	16	14	13
Point of Rocks	70	70	63	62
Prewitt	33	27	22	19
Riverside	58	34	29	52
Standley	42	41	29	23
Terry	8	5	5	5
Union	13	13	11	10
Windsor	19	13	11	11



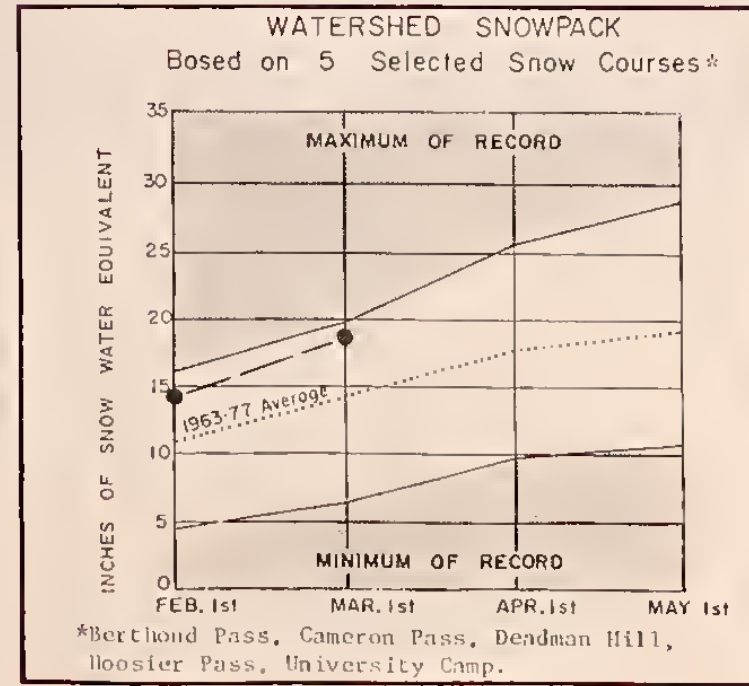
SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN AND SUB-WATERSHED	Number of Courses	1963-77 Average	1964-77 Average
Big Thompson	3	118	123
Boulder	5	113	143
Cache La Poudre	9	109	131
Clear Creek	5	145	140
Saint Vrain	3	122	180
South Platte	7	126	148

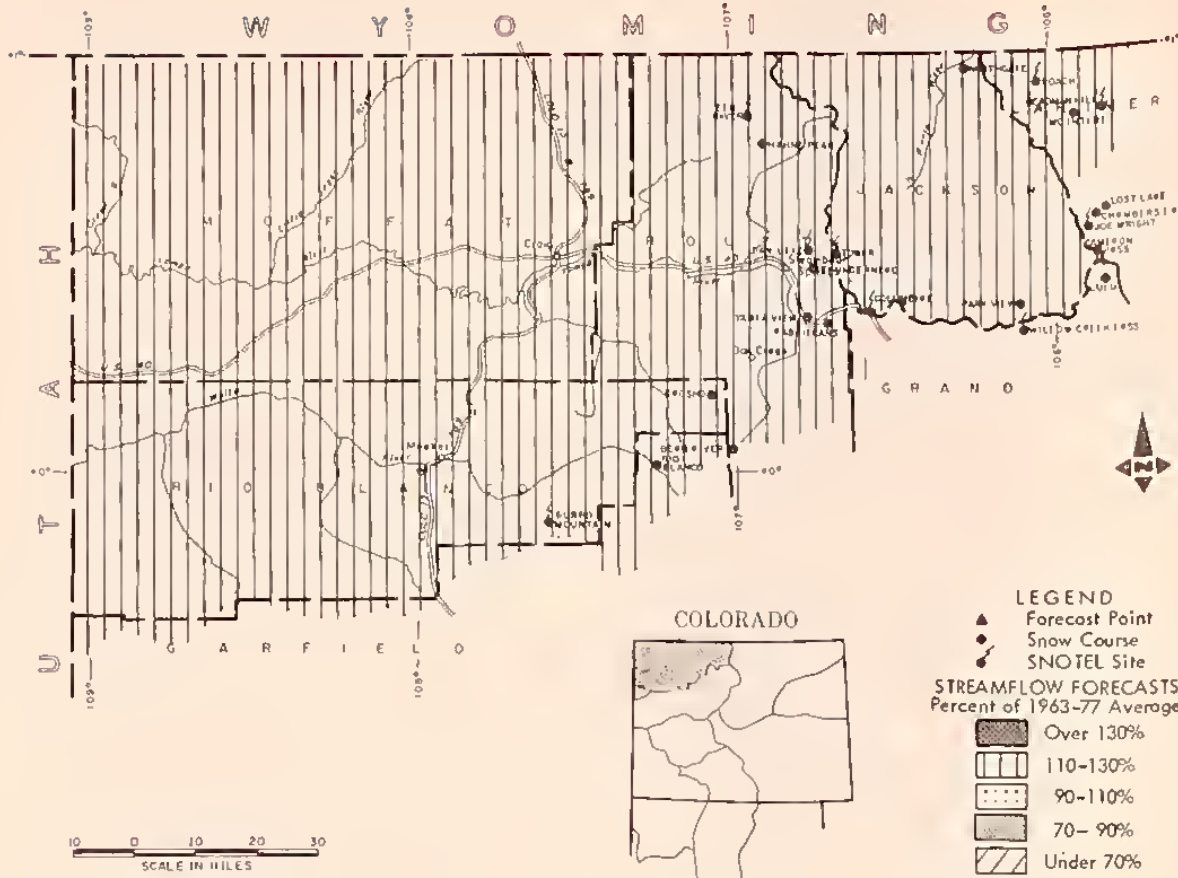
SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	PERCENT OF 1963-77 AVERAGE
<b>SOUTH PLATTE BASIN</b>				
<b>Boulder Creek</b>				
Baltimore	2/28	30	8.2	3.8
Boulder Falls	2/27	44	9.3	11.3
Lake Eldora	2/26	44	13.2	10.4
University Camp	2/27	57	18.8	15.8
<b>Big Thompson River</b>				
Bear Lake	2/28	59	19.2	17.1
Deer Ridge	2/28	28	9.4	5.9
Hidden Valley	2/28	41	10.2	8.4
Lake Irene (B)	2/25	78	23.0	21.5
Long's Peak	2/25	41	11.7	11.9
Two Mile	2/28	52	15.1	13.6
Willow Park	2/29	66	19.5	17.5
<b>Cache La Poudre</b>				
Bennett Creek	2/27	35	10.3	7.8
Big South	2/25	17	4.6	3.0
Cameron Pass	2/25	70	22.2	24.3
Chambers Lake	2/25	39	11.5	10.7
Deadman Hill	2/29	51	15.8	15.4
Hourglass Lake	2/27	32	9.4	7.0
Joe Wright	2/25	72	22.0	20.7
Lost Lake	2/25	47	12.7	12.5
Red Feather	2/29	33	10.2	7.8
<b>Clear Creek</b>				
Baltimore (B)	2/28	30	8.2	3.8
Berthoud Falls	2/28	55	17.1	11.1
Empire	2/28	34	9.1	5.4
Grizzly Peak (B)	2/28	62	17.8	14.5
Loveland Pass	2/27	57	16.8	12.7
<b>St. Vrain River</b>				
Copeland Lake	2/24	33	8.6	6.2
Ward	2/26	28	8.1	5.8
Wild Basin	2/24	52	14.0	13.1
<b>South Platte River</b>				
Bison Reservoir	2/25	24	6.2	3.6
Como	2/28	24	7.1	6.0
Geneva Park	NS	---	---	4.3
Horseshoe Mountain	2/29	42	12.4	10.8
Hoosier Pass	2/26	51	16.3	10.8
Jefferson Creek	2/28	35	10.3	9.1
Niwot	2/26	42	12.4	9.8
Trout Creek Pass	2/27	24	6.2	5.0

NS-No survey.  
(B)-On adjacent drainage.



YAMPA, WHITE AND NORTH PLATTE RIVER WATERSHEDS IN COLORADO



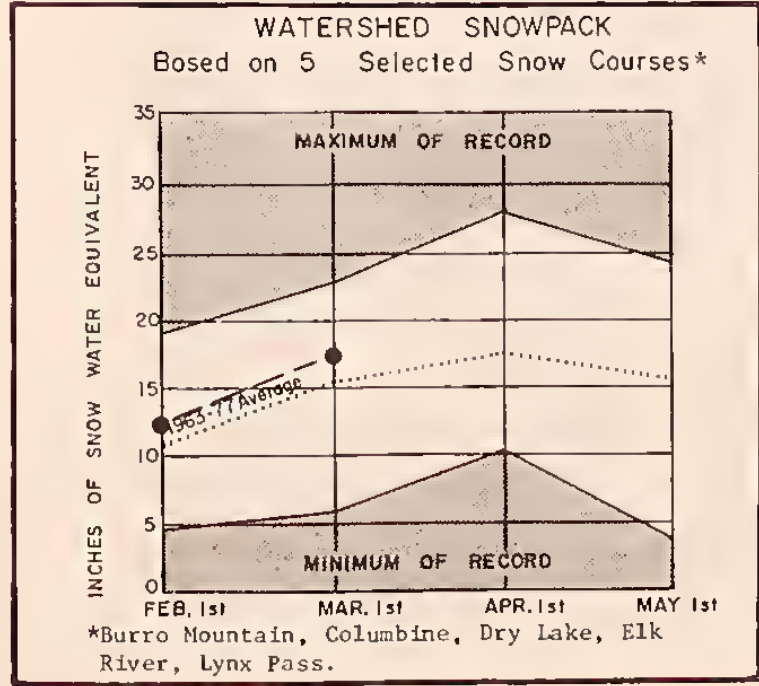
**YOUR WATER SUPPLY**  
FEBRUARY SNOW COURSE READINGS INDICATE THE SNOWPACK IN THE AREA IS 18% ABOVE AVERAGE WITH THE ONLY SIGNIFICANT INCREASE ON THE ELK RIVER WHICH WENT FROM 112% OF AVERAGE ON FEBRUARY 1 TO 134% OF MARCH 1. THE ELK RIVER SNOW COURSE INCREASED BY 6.7" OF WATER OR 176% OF THE NORMAL FEBRUARY AMOUNT. STREAMFLOW FORECASTS IN THE AREA ARE 10 TO 25% ABOVE AVERAGE WHICH SHOULD MEAN GOOD WATER SUPPLIES. SOIL MOISTURE IS GENERALLY GOOD.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Elk River at Clark	230	116	198.0
Laramie River near Woods	155	124	125.0
Little Snake River at Lily	420	120	349.0
North Platte River at Northgate	300	126	238.0
White River near Meeker	310	108	287.0
Yampa River near Maybell	1030	114	905.0
Yampa River at Steamboat Springs	300	110	273.0

WATER SUPPLY OUTLOOK

STREAM or AREA	Spring Season	Summer Season
Canadian River	Avg.	Fair
Hunt Creek	Avg.	Fair
Illinois River	Avg.	Fair
Michigan River	Avg.	Fair
Oak Creek	Avg.	Fair
Trout Creek	Avg.	Fair



SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN AND SUB-WATERSHED	Number of Courses	1963-77 Average	1964-77 Average
Elk	2	101	134
Laramie	2	105	129
North Platte	5	95	111
White	2	95	116
Yampa	6	94	115

SNOW COURSE MEASUREMENTS

SNOW COURSE	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	PERCENT OF 1963-77 AVERAGE
<b>NORTH PLATTE BASIN</b>				
<b>Laramie River</b>				
Deadman Hill	2/29	51	15.8	15.4
McIntyre	Not Scheduled	---	---	---
Roach	2/26	69	20.1	18.8
<b>North Platte River</b>				
Cameron Pass	2/25	70	22.2	24.3
Columbine Lodge	2/26	80	21.7	24.7
Northgate	2/28	31	7.6	5.0
Park View	2/27	35	8.5	9.2
Willow Cr. Pass (B)	2/27	47	12.8	13.7
<b>YAMPA BASIN</b>				
<b>Elk River</b>				
Elk River	2/28	65	19.2	19.7
Hahn's Peak	2/28	61	17.9	17.2
<b>White River</b>				
Burro Mountain	2/27	61	15.4	16.8
Rio Blanco	2/28	55	15.2	15.5
<b>Yampa River</b>				
Bear River	2/29	49	12.3	11.1
Columbine (B)	2/26	80	21.7	24.7
Crosby	Not Scheduled	---	---	---
Dry Lake	2/27	69	20.5	22.5
Lynx Pass (B)	2/26	44	10.8	11.2
Rabbit Ears	2/26	83	23.7	23.5
Tower	2/27	164	45.0	50.0
Yampa View	2/26	57	16.7	15.9

NS-No survey.  
(B)-On adjacent drainage.

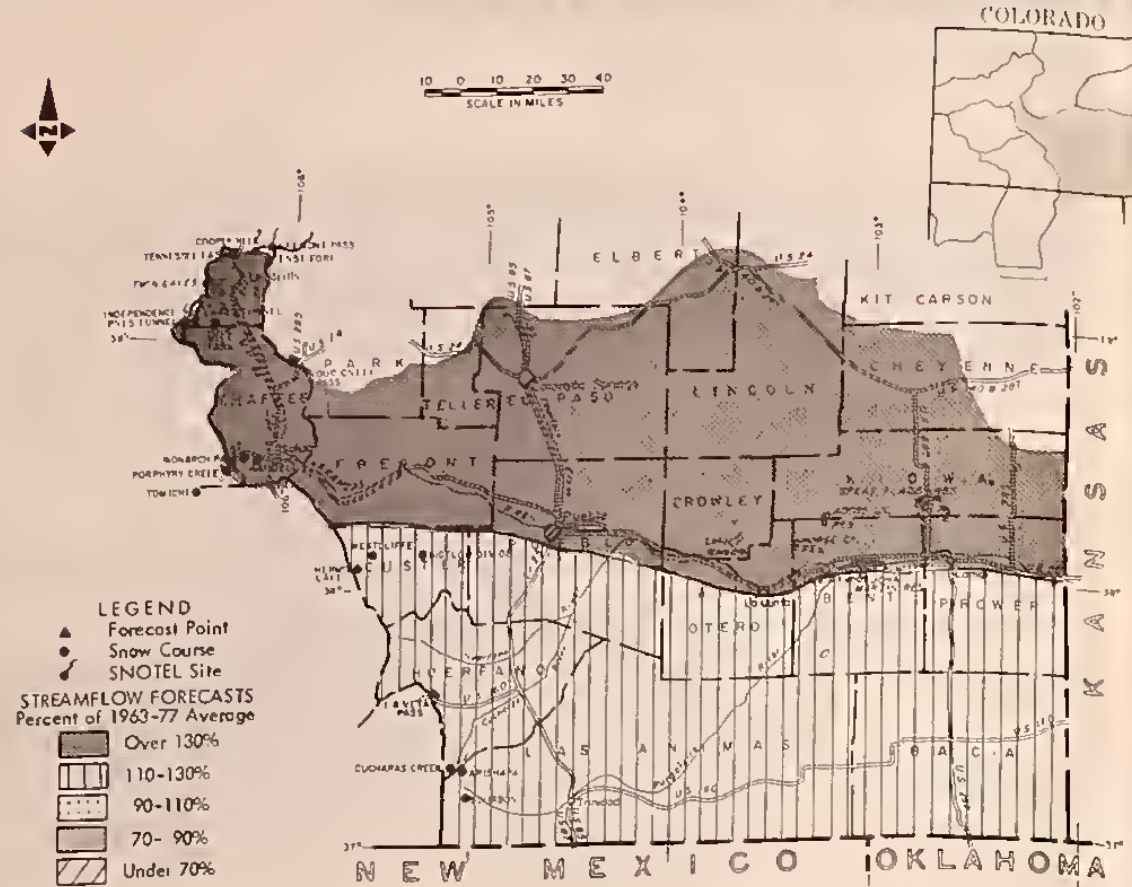








# ARKANSAS RIVER WATERSHED IN COLORADO



## YOUR WATER SUPPLY

SNOWPACK ACCUMULATIONS REMAINED ABOVE NORMAL IN THE BASIN RANGING FROM 123% ON THE PURGATOIRE TO 127% OF NORMAL ON THE MAINSTEM OF THE ARKANSAS. STREAMFLOW FORECASTS ARE ALL ABOVE AVERAGE INDICATING GOOD WATER SUPPLIES FOR THE ARKANSAS RIVER. SOIL MOISTURE CONDITIONS ARE FAIR TO GOOD. RESERVOIR STORAGE IN TRINIDAD, PUEBLO, AND UPSTREAM RESERVOIRS IS GOOD. WINTER STORAGE IN PUEBLO RESERVOIR IS INCREASING WITH VERY LITTLE WINTER IRRIGATION TAKING PLACE. PUEBLO IS NOW 20,000 ACRE-FEET AHEAD OF THIS TIME LAST YEAR AND IS FINALLY APPROACHING THE LEVELS PRIOR TO THE DROUGHT OF 1977.

STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Arkansas River near Pueblo (1)	412	158	260.0
Arkansas River at Salida (2)	400	139	288.0
Cucharas River near La Veta	11	121	9.1
Huerfano River near Redwing	17	127	13.4
Purgatoire River at Trinidad (3)	38	116	32.8

(1) Plus change in storage in Pueblo Reservoir. (2) Observed flow plus change in Glori Creek, Twin Lake and Turquoise Reservoirs minus diversion through Buck Tranche, Southard, Davis, Twin Lake and Henshale's Tunnels and Ewing, Fremont Park, World and Colabrine detritals. (3) Change in storage in Trinidad Reservoir.

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Name of Stream and Reservoir	Upstream Capacity	Storage		
		Total Feet	Lost Yards	1953-77 Average
Adobe	62	1	0	13
Clear Creek	11	7	1	7
Great Plains	150	0	0	42
Holbrook Lake	7	5	0	--
Horse Creek	27	21	11	5
John Martin	621	32	8	56
Lake Henry	8	5	0	--
Neredith	42	0	0	10
Pueblo	351	57	37	--
Trinidad	158	22	2	--
Turquoise	121	85	57	30
Twin Lakes	58	33	16	26

## WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Leafy Season
Apishapa River	Avq.	Fair
Fountain Creek	Exc.	Avq.
Grape Creek	Avq.	Fair
Hardscrabble Creek	Avq.	Fair
Monument Creek	Exc.	Avq.

### SUMMARY of SNOW MEASUREMENTS

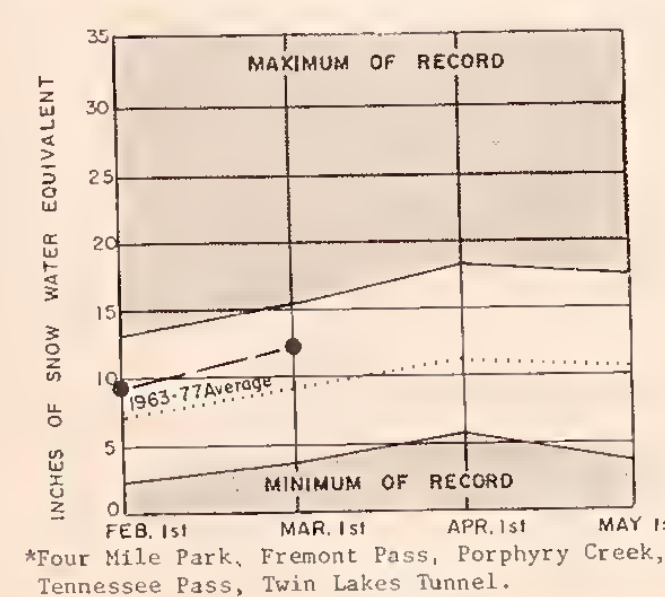
COMPARISON WITH PREVIOUS YEARS			THIS YEAR'S OVER- PAID PERCENTAGE OF	
RIVER BASIN AND SUB-WATERSHED	Number of Covered Acreages		Last Year	This Year's Average
Arkansas	10		96	127
Cucharas	2		98	126
Purgatoire	1		86	123

## SHOW COURSE MEASUREMENTS

SNO# COURSE	DATE OF SURVEY	CURRENT INFORMATION		PAST RECORD	
		SNO# DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	LAST YEAR
ARKANSAS BASIN					
<u>Arkansas River</u>					
Bigelow Divide	2/28	24	5.8	5.9	5.8
Brumley	2/28	46	12.3		
Cooper Hill (B)	2/28	43	10.2	9.7	8.8
East Fork	2/28	41	9.9	8.4	8.0
Four Mile Park	2/27	34	7.7	7.2	4.4
Freemont Pass	2/28	60	15.8	13.6	12.0
Garfield	2/29	54	16.3	15.6	11.0
Hermit Lake	2/26	30	9.1	13.2	7.0
Monarch Pass	2/29	56	16.2	19.0	13.0
South Colony	2/27	59	16.5	29.4	
Tennessee Pass	2/27	44	11.1	9.9	8.0
Twin Lakes Tunnel	2/29	50	12.6	13.4	8.0
Westcliffe	2/26	27	7.2	11.5	6.0
<u>Cucharas River</u>					
Apishapa	2/27	27	8.0	5.6	6.0
Cucharas Creek	2/27	29	8.5	6.8	--
La Veta Pass (B)	2/28	36	9.6	12.4	7.0
Huerfano	2/24	28	7.3	--	--
<u>Porgatoire River</u>					
Bourbon	2/27	32	7.0	8.1	5.0
Whiskey Creek	2/27	37	5.4	9.5	--

NS-No survey.  
(B)-In adjacent drainage

WATERSHED SNOWPACK  
Based on 5 Selected Snow Courses \*



\*Four Mile Park, Fremont Pass, Porphyry Creek,  
Tennessee Pass, Twin Lakes Tunnel.



# RIO GRANDE WATERSHED IN COLORADO AND NEW MEXICO

## YOUR WATER SUPPLY

FEBRUARY CONTINUED THE PATTERN OF EXTREMELY HEAVY SNOWFALL IN THE MOUNTAINS WITH RECORD LEVELS RECORDED IN THE HEADWATERS OF THE RIO CHAMA ON CUMBRES PASS. THE CUMBRES PASS SNOW COURSE RECORDED A 13.2" INCREASE IN WATER CONTENT BETWEEN THE END OF JANUARY AND THE END OF FEBRUARY. IT IS CURRENTLY 216% OF NORMAL. SNOWPACK IS NOW 162% OF AVERAGE IN THE RIO GRANDE BASIN IN COLORADO AND 174% OF AVERAGE IN THE RIO GRANDE BASIN IN NEW MEXICO.

PROSPECTS ARE BRIGHT FOR AN EXCELLENT RUNOFF SEASON THROUGHOUT THE ENTIRE BASIN WITH STREAMFLOW GENERALLY EXPECTED TO RANGE BETWEEN 150 AND 250% OF NORMAL. RESERVOIR STORAGE IN THE BASIN IS MORE THAN DOUBLE NORMAL VOLUMES. THE POTENTIAL NOW EXISTS FOR SOME LOCALIZED LOWLAND FLOODING ALONG MAJOR RIVERS DURING SPRING RUNOFF.

STREAMFLOW FORECASTS (1000 Ac. Fl.)

FORECAST POINT	Forecast	% of Average	1963-77 Average
<u>COLORADO (April-September)</u>			
Alamosa Creek above Terrace Reservoir	95	149	63.0
Conejos River near Mogote (1)	310	169	183.0
Culebra Creek at San Luis (2)	20	131	15.3
La Jara Creek near Capulin	10	132	7.6
Los Pinos River near Ortiz	110	179	61.3
Rio Grande at Thirty Mile Bridge (3)	165	139	119.0
Rio Grande near Del Norte (3)	680	147	462.0
Saguache Creek near Saguache	35	116	30.1
San Antonio River at Ortiz	30	246	12.2
South Fork of Rio Grande at South Fork	180	151	119.0
Trinchera Water Supply (April-July) (6)	28	128	21.9
<u>NEW MEXICO (March-July)</u>			
Costilla Creek at Costilla (4)	18	117	15.4
Jemez River near Jemez	52	156	33.3
Pecos River at Pecos	60	158	38.1
Red River at Mouth	32	118	27.2
Rio Chama at El Vado	400	226	177.0
Rio Grande at Otowi (5)	1100	221	497.0
Rio Grande at San Narcial (5)	850	254	335.0
Rio Hondo near Valdez	14	109	12.8
Rio Pueblo de Taos near Taos	23	121	19.0
Santa Cruz River at Cundiyo	20	172	11.1

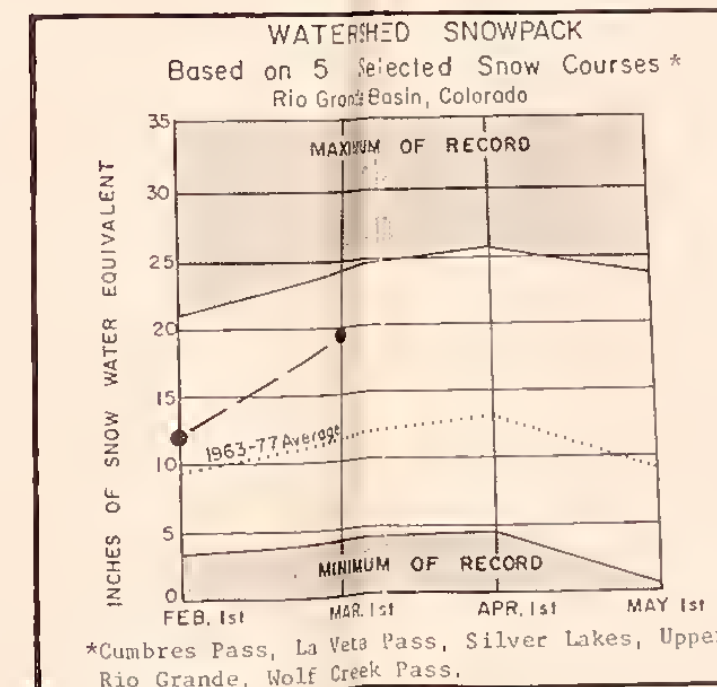
### SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)		
RIVER BASIN and SUB-WATERSHED	Number of Courtier Assigned	THIS YEAR'S SNOW WATER AS PERCENT OF
		LAST YEAR 1966-77 Aving
COLORADO		
Alamosa	1	66 122
Conejos	6	96 185
Culebra	4	67 129
Rio Grande, CO	13	73 155

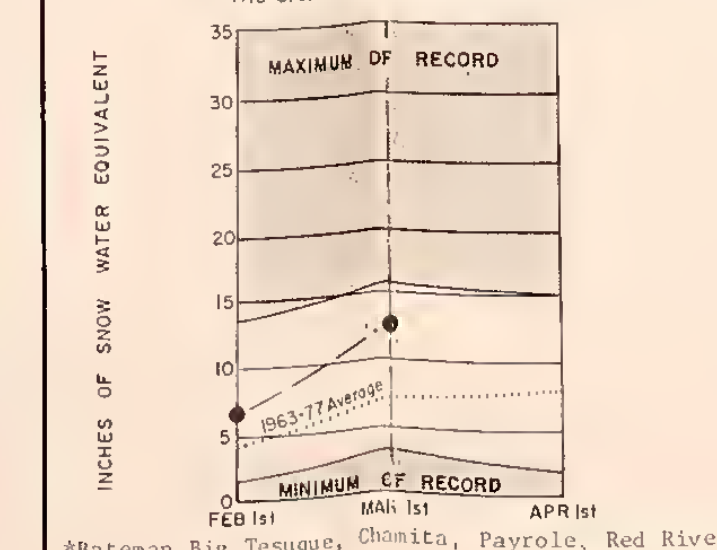
### SNOW COURSE MEASUREMENTS

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	
				LAST YEAR	3-YR. AVE.
RIO GRANDE BASIN-COLO.					
<u>Alamosa River</u>					
Lily Pond	2/28	65	17.0	---	---
Silver Lakes	2/28	25	6.2	9.4	5.1
<u>Conejos River</u>					
Cumbres Pass	2/26	103	34.6	31.9	16.0
Cumbres Trestle	2/26	119	39.6	37.1	18.1
La Nanga	2/26	80	23.9	28.8	14.2
Pinos Mill	2/27	99	31.4	29.0	17.2
Platoro	2/28	69	18.7	22.8	13.8
River Springs	2/29	26	8.6	10.0	5.2
<u>Culebra River</u>					
Brown Cabin	2/28	33	8.3	13.6	4.9
Culebra	2/26	37	8.8	14.3	7.2
La Veta Pass (B)	2/28	36	9.6	12.4	7.6
Trinchera (B)	2/27	32	7.5	10.8	6.8
<u>Rio Grande</u>					
Big Meadows	2/27	66	19.9	26.1	7.1
Cochetopa Pass	2/26	25	5.3	7.1	4.7
Craback	2/25	54	13.9	23.2	12.2
Hway	2/25	102	30.9	37.5	19.9
Lake Humphrey	2/25	37	8.2	15.3	5.8
Love Lake	2/26	44	10.2	17.3	6.5
Middle Creek	2/26	71	20.9	33.1	12.2
Pass Creek	2/25	62	17.4	22.2	10.0
Pool Table	2/27	28	5.9	10.7	4.9
Porcupine	2/26	41	9.9	16.9	8.2
Santa Maria	2/26	30	6.3	10.9	4.3
Upper Rio Grande	2/26	44	11.6	16.2	7.0
Wolf Creek Pass	2/25	112	35.5	40.1	21.8
Wolf Cr. Summit (B)	2/25	113	35.2	44.2	22.7

NS-No survey.  
(B)-On adjacent drainage.



WATERSHED SNOWPACK  
Based on 5 Selected Snow Courses \*  
Rio Grande Basin, New Mexico



	FEB 1st	MAR 1st	APR 1st
*Pateman	Big Tesuque,	Chamita,	Payrole, Red Rive

### SUMMARY of SNOW MEASUREMENTS

COMPARISON WITH PREVIOUS YEARS		THIS YEAR AS PERCENT	
RIVER BASIN SURVEYED	Number of Chuviesos	1961-62	1962-63
<b>NEW MEXICO</b>			
Pecos	1	57	176
Red River	2	56	120
Rio Chama	3	117	217
Rio Grande, NM	14	98	170
Rio Hondo	0	--	--

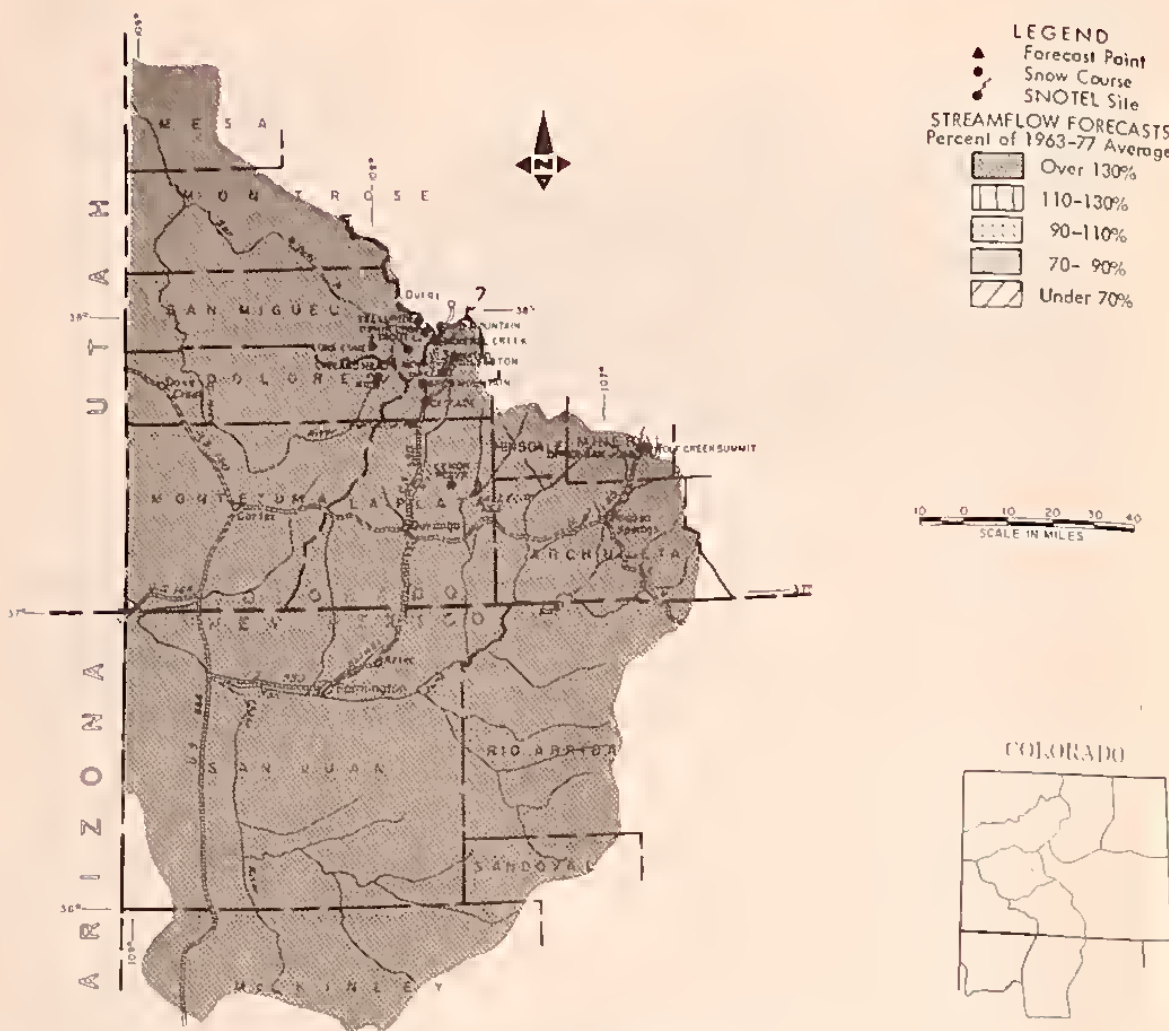
### SNOW COURSE MEASUREMENTS

SHOW COURSE	CURRENT INFORMATION		PAST RECORD		
	DATE OF SURVEY	SHD DEPTH (INCHES)	WATER CONTENT (INCHES)	LAST YEAR	AVG 67-71
RIO GRANDE BASIN - NM					
<u>Pecos River</u>					
Pauchuela	2/29	19	6.0	10.5	3.0
<u>Red River</u>					
Hematite Park (B)	2/28	16	4.9	8.9	3.7
Red River	2/28	25	6.1	10.7	5.5
<u>Rio Chama</u>					
Bateman	2/27	56	17.0	15.7	9.2
Chama Divide	2/26	31	9.8	7.1	3.3
Chamita	2/27	54	16.6	14.4	7.6
<u>Rio Grande</u>					
Alamitos	2/26	27	8.6	6.9	5.0
Bernal Trail (B)	2/28	22	4.4	8.3	---
Big Tesuque	2/27	30	9.0	10.6	5.5
Cordova	2/27	47	13.7	13.4	8.8
Elk Cabin	2/27	14	5.0	6.0	3.0
Gallegos Peak	2/29	38	10.4	14.6	---
Hopewell	2/26	74	22.5	22.8	13.0
La Cueva	2/25	40	11.4	12.2	5.0
North Costilla	2/27	21	5.0	5.8	---
Palo	2/28	31	9.3	9.6	6.0
Payrole	2/26	52	14.5	13.8	7.0
Quemazon	2/26	44	12.0	15.2	7.0
Rio En Medio	2/27	42	12.3	15.4	8.0
San Antonio Sink	2/28	39	11.6	---	7.0
Sandoval	2/28	28	7.5	9.7	4.0
Señorita Olive	2/26	48	14.9	11.8	6.0
Taos Canyon	2/28	20	5.9	8.8	4.0
Tres Ritos	2/26	23	8.0	6.5	5.0
<u>Rio Hondo</u>					
Taos Powderhorn	2/29	77	24.7	37.9	---

NS-No survey.  
(B) Or adjacent drainage.



# SAN MIGUEL, DOLORES, ANIMAS AND SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO



## SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		LAST YEAR	1963-77 AVERAGE
Animas	8	83	158
Dolores	6	96	142
San Juan	6	97	183

## SNOW COURSE MEASUREMENTS

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTENT (INCHES)	
				LAST YEAR	AVG. 1977
SAN JUAN-DOLORES BASIN					
<u>Animas River</u>					
Cascade	2/28	64	19.9	24.2	10.4
Lemon	2/29	56	18.5	21.6	8.3
Mineral Creek	2/27	65	18.8	24.1	12.6
Molas Lake	2/27	57	16.8	20.4	11.2
Purgatory	2/28	87	26.8	34.9	16.5
Red Mt. Pass (B)	2/27	97	28.7	32.8	24.0
Silverton Sub-Sta.	2/27	42	12.1	13.8	7.4
Spud Mountain	2/27	100	31.5	36.9	19.1
<u>Dolores River</u>					
Groundhog	2/29	54	17.3	17.2	15.2
Houser Camp	2/26	54	15.2	---	---
Lizard Head	2/27	72	20.0	21.4	13.9
Lone Cone	2/27	69	20.2	21.2	13.9
Ophir Loop	2/28	58	16.3	17.6	---
Rico	2/27	53	14.5	15.5	7.2
Lizard Head Pass	2/27	69	18.0	20.0	---
Telluride	2/29	35	8.9	10.0	7.3
Trout Lake	2/29	62	18.0	17.9	12.0
<u>San Juan River</u>					
Chama Divide (B)	2/26	31	9.8	7.1	3.2
Chamita (B)	2/27	54	16.6	14.4	7.6
La Plata	2/27	106	35.5	26.8	16.2
Mancos T-Down	3/03	82	29.7	27.4	16.6
Upper San Juan	2/25	131	43.1	48.2	24.6
Wolf Cr. Pass (B)	2/25	112	35.5	41.0	21.8
Wolf Cr. Summit	2/25	113	35.2	44.2	22.7

(B)-On adjacent drainage.

(B)-On adjacent drainage.

## YOUR WATER SUPPLY

STORMS TRACKING ACROSS SOUTHERN CALIFORNIA AND ARIZONA CONTRIBUTED TO THE SUBSTANTIAL SNOWPACK INCREASES REALIZED IN THE SAN JUAN MOUNTAINS DURING THE LAST MONTH. THE SNOWPACK RANGES FROM 142% OF NORMAL ON THE DOLORES TO 183% OF NORMAL ON THE SAN JUAN WATERSHED. LAST MONTH THESE SAME DRAINAGES RANGED FROM 118% TO 141%. STREAMFLOWS IN THE AREA WILL BE EXCELLENT AND SHOULD RANGE FROM 35 TO 81% ABOVE NORMAL. RESERVOIRS ARE AT OR NEAR AVERAGE WITH THE EXCEPTION OF NAVAJO WHICH IS 161% OF NORMAL AND 95% OF LAST YEAR.

## STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September

FORECAST POINT	Forecast	% of Average	1963-77 Average
Animas River at Durango	580	136	425.0
Dolores River at Dolores	320	137	233.0
La Plata River at Hesperus	35	149	23.5
Los Pinos River at Bayfield (1)	328	161	204.0
Mancos River near Towac (2)	31	142	21.9
Inflow to Navajo River (1 & 3)	1100	181	608.0
Piedra Creek at Arboles	350	174	201.0
San Juan River at Carracas	620	167	370.0
San Miguel River at Placerville	170	137	124.0

(1) Observed flow plus change in storage in Vallecito Reservoir. (2) March-July. (3) April-July.

## WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

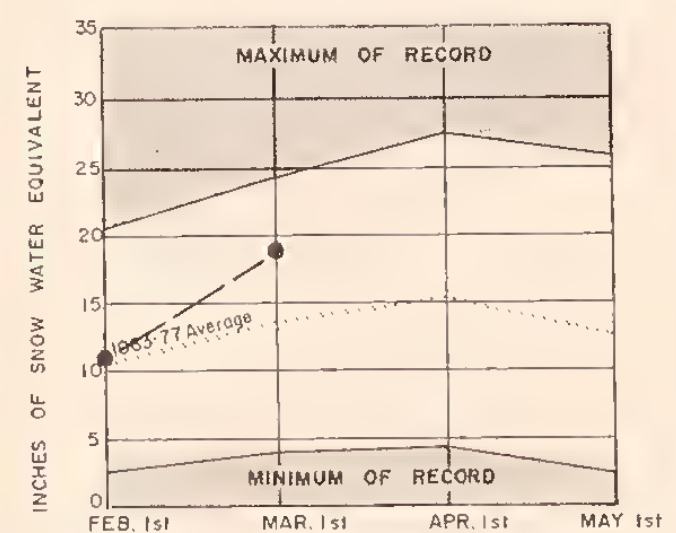
STREAM or AREA	Flow Period	
	Spring Season	Late Season
Florida River	Exc.	Exc.
Hermosa Creek	Exc.	Exc.
West Dolores River	Exc.	Exc.
Williams Creek	Exc.	Exc.

## RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

Basin or Stream and RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Groundhog	22	8	9	10
Jackson Gulch	10	1	2	5
Lemon	40	19	8	18
Navajo	1696	1106	1167	689
Vallecito	126	47	40	55

## WATERSHED SNOWPACK

Based on 5 Selected Snow Courses \*



\*Cascade, Lizard Head, Molas Lake, Red Mountain Pass, Telluride.

## WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

### -GUNNISON RIVER WATERSHED

Describes water supply conditions in Delta, Gunnison, Cimarron, Shavano, and Uncompahgre Soil Conservation Districts.

### -COLORADO RIVER WATERSHED

Describe water supply conditions in DeBeque, Plateau Valley, Mesa, Bookcliff, Eagle County, Middle Park, South Side, and Mt. Sopris Soil Conservation Districts.

### -SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Fort Collins, Big Thompson, Longmont, Boulder Valley, Jefferson, Teller-Park, Douglas County, Morgan, Kiowa, West Arapahoe, West Adams, East Adams, Platte Valley, Southeast Weld, and West Greeley Soil Conservation Districts. Also describes water supply conditions in Sedgwick, South Platte, Hoxton, Peetz, Padroni, Morgan, Rock Creek, and Yuma Soil Conservation Districts.

### -YAMPA, WHITE AND NORTH PLATTE RIVERS WATERSHED

Describes water supply conditions in Yampa, Moffat, West Routt, East Routt, North Park, White River, and Douglas Creek Soil Conservation Districts.

### -ARKANSAS RIVER WATERSHED

Describes water supply conditions in Lake County, Upper Arkansas, Fremont, Custer County Divide, Fountain Valley, Black Squirrel, Central Colorado, Turkey Creek, South Pueblo, Olney Boone, Cheyenne, Upper Huerfano, Spanish Peaks, Purgatoire River, Trinchera, Western Baca, Southeastern Baca, Two Buttes, Bent, Timpas, Northeast Prowers, Prowers, Kiowa County, West Otero, East Otero, Proirie, Hi Plains, and Double El Soil Conservation Districts.

### -RIO GRANDE WATERSHED

Describes water supply conditions in Rio Grande, Center, Conejos, Mosco Hooper, and Costilla, Soil Conservation Districts. Also describes water supply conditions in Upper Chomo, East Rio Arriba, Taos, Lindrieth, Jemez, Santa Fe-Pojoaque, Sandavol, Tijeras, Cuba and Edgewood Soil Conservation Districts.

### -DOLORES, SAN JUAN, AND ANIMAS RIVERS WATERSHED

Describes water supply conditions in San Miguel Basin, Dove Creek, Dolores, Mancos, LaPlata, Pine River, San Juan, San Miguel Basin, and Glade Park Soil Conservation Districts.